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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,512	10/12/2001	David S. Allison	0007056-0197/P5940	3988
32615	7590	01/26/2006	EXAMINER	
OSHA LIANG L.L.P./SUN 1221 MCKINNEY, SUITE 2800 HOUSTON, TX 77010			VU, TUAN A	
			ART UNIT	PAPER NUMBER
			2193	

DATE MAILED: 01/26/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/977,512	Applicant(s) ALLISON, DAVID S.	
	Examiner Tuan A. Vu	Art Unit 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -- .

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This action is responsive to the Applicant's response filed 9/12/05.

As indicated in Applicant's response, claims 1 and 6 have been amended, and claims 5 and 10 canceled. The finality of the previous action has been withdrawn as per Pre-Appeal Conference decision filed 11/17/05. Claims 1-4, 6-9 are pending in the office action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasumatsu, USPN: 5,579,518 (hereinafter Yasumatsu); in view of Chan et al., USPubN: 2005/0172302 (hereinafter Chan).

As per claim 1, Yasumatsu discloses a method for binding an object member at runtime comprising:

declaring said object member (e.g. *provisional type 12* - Fig. 2) in a program written in a dynamic typed programming language (see *provisional type 12* – Fig. 1-2), and running said program comprising:

determining whether said object member is used at runtime, and whether said object member is accessible (e.g. *routine lookup* – col. 7, lines 54-60; Fig. 3-4; col. 8, lines 18-26, 50-60); and

binding at runtime said object member to its reference if said object member is used and accessible (col. 8, line 61 to col. 9, line 54 – Note: push value into a stack after a dynamic type checking reads on binding a object to its reference for a runtime use; and lookup method reads on whether object is accessible).

But Yasumatsu does not disclose runtime accessibility determination using an access control level wherein a public member and private member have different access right. In a method to support runtime object resolution using statically provided information similar to the provisional type structure by Yasumatsu, Chan discloses providing package information for enabling runtime readjusting of class objects references with respect to reference to a function/method call – i.e. call invocation can be accessible - and discloses member access control wherein a Access violation can be detected (e.g. Fig. 2 – Note: *Illegal Access* violation reads on public and private member access incompatibility). In view of the object-oriented aspect of Yasumatsu's (see col. 1, lines 20-61) where the inheritance as well as public and private access restrictions is known to be integral thereto, it would have been obvious for one of ordinary skill in the art at the time the invention was made to apply the dynamic type binding by Yasumatsu in combination with the lookup information in the context of call reference and runtime accessibility using the access control as mentioned above by Chan because problems encountered in known OO programming dynamic binding that come with polymorphism and parent-child hierarchical-type access would be alleviated when the mapping of child/parent relationship for a call reference can be correctly redirected at runtime (see Chan para 0009 - 0017).

As per claim 2, Yasumatsu (in conjunction with Chan) discloses that object member is a class member of said dynamically typed programming language (e.g. *class to which... object belongs* - col. 5, lines 49-60).

As per claim 3, Yasumatsu (in conjunction with Chan) discloses that object member is a class method (e.g. Fig. 1, steps *13-14-15*).

As per claim 6, Yasumatsu discloses a computer useable medium having computer readable program code embodied therein configured to bind an object member at runtime, said computer program product comprising computer readable code configured therein to cause a computer to perform the steps:

to declare (object member...);

to determine (... object member is used); and whether said object member is accessible
and

to bind (object member to its reference) exactly as recited in claim 1 above. Hence these above limitations are rejected with the corresponding rejection as set forth above therein.

But Yasumatsu does not disclose a runtime an access control level wherein a public member and a private member have different access rights. But these limitations have been addressed in claim 1 above.

As per claims 7-8, these claims correspond to claims 2-3, respectively, hence are rejected with the corresponding rejections as set forth therein.

4. Claims 4 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yasumatsu, USPN: 5,579,518, and Chan et al., USPubN: 2005/0172302; in view of Admitted Prior Art (hereinafter APA).

As per claim 4, C++ virtual methods declared for runtime resolution of overridden functions or polymorphism-related issues has been known in the art (APA: specifications, BACKGROUND ART: p. 7-13) as well as SELF enhancement to approach late binding issues. Further, the use of message to dynamically resolve the reference to class method invocation has been mentioned in teachings by SmallTalk (base language for SELF) and Objective-C by Yasumatsu as improvements over known OO languages (see BACKGROUND; Fig. 1-2). Although Yasumatsu does not explicitly teach the object member is a virtual method, based on the APA and the various enhancements as above-mentioned, it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement the dynamically typed process for runtime binding of class members as by the combination Yasumatsu/Chan so that virtual method members are also objects for such implementation because of the need to solve the drawbacks in OO languages (see APA- languages including C++) in regard to polymorphism or overriding of OO methods, such drawbacks also being at the root for the method by Yasumatsu as mentioned above.

As per claim 9, this claim incorporates the same rejection as set forth in claim 4, for including the same limitations therein.

Response to Arguments

5. Applicant's arguments with respect to claims 1-4, 6-9 in the Remarks submitted as per 12/6/04 and in the Pre-Appeal Request filed 9/12/05 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)272-3719.

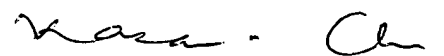
The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence – please consult Examiner before using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tuan A Vu

Patent Examiner,
Art Unit 2193
January 12, 2005



KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER